

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 44 (withdrawn): A method of transmitting data
2 between a first device and a second device, comprising
3 the steps of:
4 providing a plurality of N separate antennas,
5 said plurality including at least a first antenna and a
6 second antenna, N being a positive integer greater than
7 one;
8 operating the first device to transmit from the
9 first antenna, a first signal including said data the
10 first signal having a carrier frequency, f_c , a broadcast
11 region from the first antenna including the second
12 device;
13 operating the first device to transmit from
14 the second antenna, a second signal including said data
15 the second signal having the same carrier frequency, f_c ,
16 as the first signal, a broadcast region from the second
17 antenna including the second device, at least one of a
18 phase and an amplitude of the second signal varying over
19 time relative to the first signal, the combined average
20 transmitted power of the first and second signals being
21 maintained at an almost constant value over a period of
22 time during which the at least one of a phase and an
23 amplitude of the second signal is varied relative to the
24 first signal.

1 Claim 45 (withdrawn): The method of claim 44, wherein
2 the phase of the second signal varies over time relative

3 to the phase of the first signal, the method further
4 comprising the step of:
5 introducing a variation into the phase of the
6 second signal as a function of time prior to operating
7 the second antenna to transmit the second signal.

1 Claim 46 (withdrawn): The method of claim 45, further
2 comprising the step of:
3 controlling the rate at which data is
4 transmitted as part of the first signal as a function of
5 transmission channel quality information.

1 Claim 47 (withdrawn): The method of claim 45, wherein
2 the first device is a base station and the second device
3 is a mobile station.

1 Claim 48 (withdrawn): The method of claim 45, wherein
2 the first device is a mobile station and the second
3 device is a base station.

1 Claim 49 (withdrawn): A method of transmitting data
2 between a first device and a second device, comprising
3 the steps of:
4 providing a plurality of N separate antennas,
5 said plurality including at least a first antenna and a
6 second antenna, N being a positive integer greater than
7 one;
8 operating the first device to transmit from the
9 first antenna, a first signal including said data the
10 first signal having a center frequency, a broadcast

11 region from the first antenna including the second
12 device;
13 operating the first device to transmit from
14 the second antenna, a second signal including said data
15 the second signal having the same center frequency as the
16 first signal, a broadcast region from the second antenna
17 including the second device, at least one of a phase and
18 an amplitude of the second signal varying over time
19 relative to the first signal, the combined average
20 transmitted power of the first and second signals being
21 maintained at an almost constant value over a period of
22 time during which the at least one of a phase and an
23 amplitude of the second signal is varied relative to the
24 first signal.

1 Claim 50 (withdrawn): The method of claim 49, further
2 comprising the steps of:
3 introducing a variation into the phase of the
4 second signal as a function of time prior to operating
5 the second antenna to transmit the second signal; and
6 controlling the rate at which data is
7 transmitted as part of the first signal as a function of
8 transmission channel quality information.

1 Claim 51 (withdrawn): A communications apparatus,
2 comprising:
3 a source of data;
4 a transmitter circuit coupled to the source of
5 data for generating a plurality of data signals each data
6 signal including the same data, the plurality of data

7 signals including a first data signal and a second data
8 signal the first and second data signals differing from
9 one another as a function of time by at least one of a
10 phase and an amplitude;
11 a plurality of antennas coupled to said
12 transmitter circuit to receive and transmit said data
13 signals in parallel, each antenna receiving and
14 transmitting one of said data signals; and
15 means for varying the relative amplitudes of
16 the first and second data signals as a function of time
17 while maintaining the combined average transmitted power
18 of the first and second data signals at an almost
19 constant value over the period in time during which the
20 relative amplitudes of the first and second data signals
21 are varied.

1 Claim 52 (withdrawn): The apparatus of claim 51,
2 wherein the transmitter circuit includes means
3 for independently varying the phase of at least one of
4 the first and second data signals as a function of time.

1 Claim 53 (withdrawn): The apparatus of claim 52, further
2 comprising:
3 a receiver for receiving communications channel
4 condition information; and
5 means for determining the rate at which data
6 should be transmitted in said first and second data
7 signals as a function of the communications channel
8 information.

1 Claim 54 (withdrawn): The apparatus of claim 52, further
2 comprising:
3 a receiver for receiving communications channel
4 condition information from a plurality of mobile stations
5 regarding the condition of a communications channel
6 associated with individual ones of said plurality of
7 mobile stations; and
8 means for scheduling transmission of data to
9 individual mobile stations as a function of the received
10 communications channel condition information.

1 Claim 55 (withdrawn): The apparatus of claim 54,
2 wherein the means for scheduling includes a
3 scheduling routine which gives preferential treatment to
4 the scheduling of data transmissions to mobile stations
5 with good communications channels as compared to mobile
6 stations with poorer communications channels.

1 Claim 56 (previously presented): A communications
2 apparatus, comprising:
3 a source of data;
4 a transmitter circuit coupled to the source of
5 data for generating a plurality of data signals each data
6 signal including the same data, the plurality of data
7 signals including a first data signal and a second data
8 signal the first and second data signals differing from
9 one another as a function of time by at least one of a
10 phase and an amplitude, the transmitter circuit including
11 means for independently varying the phase of at least one

12 of the first and second data signals as a function of
13 time;

14 a plurality of antennas coupled to said
15 transmitter circuit to receive and transmit said data
16 signals in parallel, each antenna receiving and
17 transmitting one of said data signals;

18 a receiver for receiving communications channel
19 condition information from a plurality of mobile stations
20 regarding the condition of a communications channel
21 associated with individual ones of said plurality of
22 mobile stations;

23 means for scheduling transmission of data to
24 individual mobile stations as a function of the received
25 communications channel condition information
26 wherein the means for scheduling includes a scheduling
27 routine which gives preferential treatment to the
28 scheduling of data transmissions to mobile stations with
29 good communications channels as compared to mobile
30 stations with poorer communications channels; and

31 means for determining the rate at which data
32 should be transmitted in said first and second data
33 signals as a function of the communications channel
34 information.

1 Claim 57 (withdrawn): The apparatus of claim 54,
2 wherein the first and second data signals have
3 the same center frequency, f_c and a wavelength W at the
4 center frequency; and

5 wherein the first and second antennas are
6 spaced at least one half the distance of the wavelength W
7 from each other.

1 Claim 58 (withdrawn): The apparatus of claim 54,
2 wherein the first and second data signals have
3 the same carrier frequency, f_c and a wavelength W at the
4 carrier frequency; and
5 wherein the first and second antennas are
6 spaced at least one half the distance of the wavelength W
7 from each other.

1 Claim 59 (withdrawn): The apparatus of claim 51,
2 wherein the first and second data signals have
3 the same center frequency, f_c and a wavelength W at the
4 center frequency; and
5 wherein the first and second antennas are
6 spaced at least one half the distance of the wavelength W
7 from each other.

1 Claim 60 (withdrawn): The apparatus of claim 51,
2 wherein the first and second data signals have
3 the same carrier frequency, f_c and a wavelength W at the
4 carrier frequency; and
5 wherein the first and second antennas are
6 spaced at least one half the distance of the wavelength W
7 from each other.

1 Claim 61 (withdrawn): The apparatus of claim 51, further
2 comprising:

3 means for using a fixed amount of power to
4 transmit the combination of the first and second data
5 signals over time.

1 Claim 62 (withdrawn): The apparatus of claim 61, wherein
2 said transmitter circuit is an OFDM signal transmitter

1 Claim 63 (previously presented): A base station, the
2 base station comprising:

3 i) a receiver for receiving
4 communications channel condition
5 information regarding the condition of a
6 first communications channel existing
7 between the base station and a mobile
8 station and information regarding the
9 condition of additional communications
10 channels existing between the base station
11 and a plurality of additional mobile
12 stations;

13 ii) means for determining the rate at
14 which data is transmitted to said mobile
15 station as a function of the channel
16 condition information;

17 iii) means for determining the order
18 in which the base station is to transmit
19 data to different mobile stations as a
20 function of said communication channel
21 condition information and said additional
22 communications channel condition
23 information; and

24 iv) means for introducing signal
25 variations into signals transmitted to the
26 mobile stations so that the mobile
27 stations will detect fluctuations in
28 received signal power.

1 Claim 64 (previously presented): The base station of
2 claim 63, wherein signals transmitted to the mobile
3 stations are OFDM signals

1 Claim 65 (previously presented): The base station of
2 claim 64, wherein said: means for determining the order
3 in which the base station is to transmit data to
4 different mobile stations as a function of said
5 communication channel condition information and said
6 additional communications channel condition information
7 includes a scheduler routine stored in a memory.

1 Claim 66 (previously presented): The base station of
2 claim 63, further comprising: includes:
3 at least a first and second antenna for
4 broadcasting first and second signals including the same
5 data to one of said mobile stations, the first and second
6 signals having different phases.

1 Claim 67 (previously presented): A communications
2 system, comprising:
3 a mobile station;
4 a plurality of additional mobile stations; and
5 a base station, the base station including:

6 i) a receiver for receiving
7 communications channel condition
8 information regarding the condition of a
9 first communications channel existing
10 between the base station and the mobile
11 station and for receiving additional
12 communications channel condition
13 information regarding the condition of
14 additional communications channels
15 existing between the base station and said
16 additional mobile stations;
17 ii) means for determining the rate
18 at which data is transmitted to said
19 mobile station as a function of the
20 channel condition information;
21 iii) means for determining the order
22 in which the base station is to transmit
23 data to different mobile stations as a
24 function of said communication channel
25 condition information and said additional
26 communications channel condition
27 information; and
28 iv) at least a first and second
29 antenna for broadcasting first and second
30 signals including the same data to one of
31 said mobile stations the first and second
32 signals having different amplitudes.

1 Claim 68 (previously presented): A communications
2 system, comprising:

3 a mobile station;
4 a plurality of additional mobile stations; and
5 a base station, the base station including:
6 i) a receiver for receiving
7 communications channel condition
8 information regarding the condition of a
9 first communications channel existing
10 between the base station and the mobile
11 station and for receiving additional
12 communications channel condition
13 information regarding the condition of
14 additional communications channels
15 existing between the base station and said
16 additional mobile stations;
17 ii) means for determining the rate
18 at which data is transmitted to said
19 mobile station as a function of the
20 channel condition information;
21 iii) means for determining the order
22 in which the base station is to transmit
23 data to different mobile stations as a
24 function of said communication channel
25 condition information and said additional
26 communications channel condition
27 information; and
28 iv) means for introducing signal
29 variations into signals transmitted to the
30 mobile stations so that the mobile
31 stations will detect fluctuations in
32 received signal power.

1 Claim 69 (previously presented): The communication
2 system of claim 68, wherein said means for introducing
3 signal variations into signals includes a plurality of
4 antennas for transmitting the same data in parallel.